



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,410	04/19/2004	Takatsugu Doi	119494	9903
25944	7590	04/06/2006	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			MARTIN, LAURA E	
			ART UNIT	PAPER NUMBER
			2853	

DATE MAILED: 04/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/826,410	<b>Applicant(s)</b> DOI, TAKATSUGU	
	<b>Examiner</b> Laura E. Martin	<b>Art Unit</b> 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 6-10, 13, 14, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinomoto et al. (US 20030218662) in view of Suda et al. (US 20030213391).

As per claims 1 and 17, Kinomoto et al. teaches an ink jet recording method and device comprising a recording head [0002] provided with two or more nozzles respectively jetting two or more liquids respectively onto a surface of a recording medium, using a first liquid and a second liquid wherein at least one of the liquids contains a colorant, the method comprising [0009]: Providing the first liquid on a recording medium and providing the second liquid so as to be in contact with a region where the first liquid has been provided on the recording medium, to thereby form an image [0043], wherein; a contact angle of the second liquid with respect to plain paper is less than 85° [0009].

As per claim 2, Kinomoto et al. teaches an ink jet recording method, wherein the first liquid contains at least one additive selected from the group consisting of a silicone type compound and a fluorine type compound [0079].

As per claim 3, Kinomoto et al. teaches an ink jet recording method, wherein the silicone type compound is a silicone type surfactant and the fluorine type compound is a fluorine type surfactant [0079].

As per claim 6, Kinomoto et al. teaches an ink jet recording method, wherein the first liquid contains at least a water-soluble solvent, a surfactant and water, and the second liquid contains at least a colorant, a water-soluble solvent [0037] and water [0009].

As per claim 7, Kinomoto et al. teaches an ink jet recording method, wherein the first liquid contains a colorant [0037].

As per claim 8, Kinomoto et al. teaches an ink jet recording method, wherein the first liquid is color ink and the second liquid is black ink [0009].

As per claim 9, Kinomoto et al. teaches an ink jet recording method, wherein the colorant contained in the first liquid is a dye [0009].

As per claim 10, Kinomoto et al. teaches an ink jet recording method, wherein the colorant contained in the second liquid is a pigment [0009], and the pigment is selected from the group consisting of a pigment dispersible in the second liquid by combining with a polymer dispersant, a self-dispersible pigment and a pigment coated with a resin [0010].

As per claim 12, Kinomoto et al. teaches an ink jet recording method, wherein a surface tension of the first liquid is 15 mN/m or more and 45 mN/m or less [0014].

As per claim 13, Kinomoto et al. teaches an ink jet recording method, wherein a surface tension of the second liquid is 15 mN/m or more and 60 mN/m or less [0079].

As per claim 14, Kinomoto et al. teaches an ink jet recording method, wherein the viscosity of each of the first and second liquids is 1.2 mPa\*s or more and 6.0 mPa\*s or less [0080].

As per claims 1 and 17, Kinomoto et al. does not teach a contact angle of the second liquid with respect to region where the first liquid is provided on plain paper is 60° or more.

Suda et al. teaches a contact angle of the second liquid [0020] with respect to region where the first liquid is provided on plain paper is 60° or more [0112].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the inkjet recording apparatus and method taught by Kinomoto et al. with the disclosures of Suda et al. in order to improve image clarity and prevent ink bleeding.

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinomoto et al. (US 20030218662) and Suda et al. (US 20030213391), and further in view of Takao et al. (US 20020077383).

Kinomoto et al. and Suda et al. teach the ink jet recording method of claim 2; however, neither teach claim 4, an average molecular weight of the silicone type compound or fluorine type compound is 3,000 or more; and claim 5, an acid value of the

silicone type compound or fluorine type compound is 30 mg KOH/g or more and 250 mg KOH/g or less.

As per claim 4, Takao et al. teaches an average molecular weight of the silicone type compound or fluorine type compound is 3,000 or more [0031].

As per claim 5, Takao et al. teaches an acid value of the silicone type compound or fluorine type compound is 30 mg KOH/g or more and 250 mg KOH/g or less [0028].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink jet recording method of Kinomoto et al. as modified with the disclosure of Takao et al. in order to create a more stable ink product.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kinomoto et al. (US 20030218662) and Suda et al. (US 20030213391), and further in view of Shimizu et al. (US 6503685).

As per claim 12, Kinomoto et al. and Suda et al. teach the ink jet recording method of claim 1; however, neither discloses a surface tension of the first liquid is 15 mN/m or more and 45 mN/m or less.

Shimizu teaches a surface tension of the first liquid is 15 mN/m or more and 45 mN/m or less [0014].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink jet recording method of Kinomoto et al. as modified in order to create a clear image and reduce bleeding.

Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinomoto et al. (US 20030218662) and Suda et al. (US 20030213391), and further in view of Maze et al. (US 20010008411).

Kinomoto et al. and Suda et al. teach the ink jet recording method of claims 1 and 6; however, neither teach claim 15, wherein the first liquid is provided on the recording medium by utilizing any one system selected from the group consisting of a thermal ink jet system and a piezo ink jet system, and the second liquid is provided so as to be in contact with the region where the first liquid has been provided on the recording medium to thereby form an image; and claim 16, wherein the second liquid is provided on the recording medium in a liquid droplet state, and a weight of one droplet of the second liquid is 25 ng or less.

As per claim 15, Maze et al. teaches an ink jet recording method wherein the first liquid is provided on the recording medium by utilizing any one system selected from the group consisting of a thermal ink jet system and a piezo ink jet system [0004]; [0001]; [0003].

As per claim 16, Maze et al. teaches an ink jet recording method wherein the second liquid is provided on the recording medium in a liquid droplet state, and a weight of one droplet of the second liquid is 25 ng or less [0032].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink jet recording method of Kinomoto et al. as modified with the disclosure of Maze et al. in order to create a high quality ink.

**Conclusion**


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. As per claims 2-5 and 11, examiner also notes that Shimizu et al. (US 6503685) teaches the following claims with respect to the fluorine type surfactant.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura E. Martin whose telephone number is (571) 272-2160. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Laura E. Martin

 4/3/06  
**MANISH S. SHAH**  
**PRIMARY EXAMINER**